

## Abstract

A word-based interface between a MAC and a PHY, allowing for variable pin counts, variable PHY and MAC data speeds, and variable numbers of connected PHYs. The word-based interface allows for the PHY to provide PHY-to-MAC words to the MAC, and for the MAC to provide MAC-to-PHY words to the PHY, where the PHY-to-MAC words are synchronized with the MAC-to-PHY words. Data and commands are provided in fields of the words, and may be time multiplexed over the interface. Circuits within the MAC and PHY allow for the MAC to detect if a PHY is present, the number of active pins, and the number of PHYs connected. The reset and synchronization signals are integrated into a single reset/sync signal. Identification data is exchanged between the MAC and PHY so that the proper device driver for the PHY may be loaded independently of the BIOS.